

MISCELLANEOUS TYPIFICATIONS, NEW COMBINATIONS AND ONE  
NEW VARIETY IN NORTH AMERICAN *CRATAEGUS* (ROSACEAE)

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ABSTRACT

Various nomenclatural actions to validate certain names of North American *Crataegus* are taken. Firstly, the following new variety is described: **C. chrysoarpa** var. **vigintistamina** J.B. Phipps. In addition, eight new names or combinations are provided here, as follows: **C. brazoria** Sarg. var. **viburnifolia**, **C. chrysoarpa** Ashe var. **blanchardii**, **C. chrysoarpa** Ashe var. **praecox**, **C. coccinea** L. var. **pringlei**, **C. pruinosa** (H.L. Wendl.) K. Koch var. **dissona**, **C. reverchonii** Sarg. var. **mohrii**, **C. succulenta** Schrader ex Link var. **neofluvialis**, **C. viridis** L. var. **velutina**. Finally, the following 10 *Crataegus* names are typified: *C. blanchardii* Sarg., *C. dissona* Sarg., *C. gattingeri* Ashe, *C. georgiana* Sarg., *C. jackii* Sarg., *C. mohrii* Beadle, *C. neofluvialis* Ashe, *C. praecox* Sarg., *C. velutina* Sarg., and *C. viburnifolia* Sarg.

KEY WORDS: *Crataegus*, *C. chrysoarpa* var. *vigintistamina* J.B. Phipps, var. nov., new combinations, various typifications, Flora North America, volume 9

RESUMEN

Se realizan varias acciones nomenclaturales para validar ciertos nombres de *Crataegus* norteamericanas. Primero, se describe la siguiente variedad: **C. chrysoarpa** var. **vigintistamina** J.B. Phipps. Además, se aportan ocho nuevos nombres o combinaciones: **C. brazoria** Sarg. var. **viburnifolia**, **C. chrysoarpa** Ashe var. **blanchardii**, **C. chrysoarpa** Ashe var. **praecox**, **C. coccinea** L. var. **pringlei**, **C. pruinosa** (H.L. Wendl.) K. Koch var. **dissona**, **C. reverchonii** Sarg. var. **mohrii**, **C. succulenta** Schrader ex Link var. **neofluvialis**, **C. viridis** L. var. **velutina**. Finalmente, se tipifican los siguientes diez nombres de *Crataegus*: *C. blanchardii* Sarg., *C. dissona* Sarg., *C. gattingeri* Ashe, *C. georgiana* Sarg., *C. jackii* Sarg., *C. mohrii* Beadle, *C. neofluvialis* Ashe, *C. praecox* Sarg., *C. velutina* Sarg., y *C. viburnifolia* Sarg.

When preparing the treatment of so large a genus as *Crataegus* for the Flora of North America it is inevitable that one encounters a number of situations where taxa are quite well-known but do not fit comfortably into the taxonomic system without an alteration in rank. Such is the case for the eight varieties that had each originally been described as species and are proposed as new combinations here. This is primarily a 'housekeeping' document and represents the best judgment of the author without entering into the complex and detailed study required in each case to more fully defend it. An exception is in the case of *C. coccinea* var. *pringlei* where a much more elaborated paper (with J.A. Macklin) is being pre-empted for the sake of meeting the publication schedule for Flora of North America vol. 9 (Rosaceae).

The basionyms to be treated here usually need lectotypification and all taxa are assigned to the taxonomic series to be used by the author in Flora of North America vol. 9. In some cases the author cited a type number from among a range of paratypes that does not really provide the discrimination needed for that taxon. In such cases I have also provided an epitype. Summary comments may also be given on distribution and differentiation from similar taxa.. The taxa treated are arranged alphabetically by series, as follows:

**series Coccineae (Loud.) Rehd.**

**1. *Crataegus coccinea* L. var. *pringlei* (Sarg.) J.A. Macklin & J.B. Phipps, comb. et stat. nov.** *Crataegus pringlei* Sarg., *Rhodora* 3:21. 1901. TYPE: VERMONT: CHITTENDEN CO.: Charlotte, 27 May 1877 (LECTOTYPE designated by Macklin & Phipps 2002:26).

**Leaf blades** broadly elliptic to elliptic-ovate (typically 1.25 x as long as broad), concavo-convex, 4–7 cm, lobes often shallow, bases rounded to broad-cuneate. **Stamens** 8–10. **Pomes** often oblong.

Flowering May; fruiting Sept–Oct. Brushy places, woodland margins, fencelines, overgrown pastures; 10–300 m; Ont., Que.; Conn., Ill., Ind., Mass., ?Me., Mich., Minn., N.H., N.Y., Oh., Penna., R.I., Vt., Wisc.

*Crataegus coccinea* var. *pringlei* in its most characteristic form has markedly differently shaped leaves from pure *coccinea* as well as a tendency to oblong, rather than subspherical fruit (see key below). The extreme forms of variety *pringlei* are very distinct in appearance with their convex, broad-elliptic, usually only shallowly lobed leaves. Populations of pure examples of both varieties are quite frequently encountered. However, intermediates with var. *coccinea* are also quite common. *Crataegus coccinea* var. *fulleriana* (20 stamens), the third variety of *C. coccinea*, is in other respects, rather similar to var. *pringlei*. This matter will be elaborated in Macklin and Phipps (in prep.).

Variety *pringlei* is found throughout the range of the species except not in Virginia and North Carolina.

#### KEY TO VARIETIES OF *CRATAEGUS COCCINEA*

1. Leaf blades plane, ovate (1.4–1.5 × as long as broad), 5–8 cm, broadest in lower 1/3; lobes well-marked, bases wide-cuneate to truncate; pomes usually suborbicular \_\_\_\_\_ ***Crataegus coccinea* var. *coccinea***
1. Leaf blades plane or concavo-convex, broadly elliptic to elliptic-ovate (typically 1.25 × as long as broad), 4–7 cm, lobes often shallow, bases rounded to broad-cuneate; pomes oblong to suborbicular.
  2. Stamens 8–10; leaf blades conspicuously concavo-convex, this usually evident even from pressed specimens; pomes often oblong \_\_\_\_\_ ***Crataegus coccinea* var. *pringlei***
  2. Stamens ca. 20; leaf blades plane; pomes usually suborbicular \_\_\_\_\_ ***Crataegus coccinea* var. *fulleriana***

#### series *Crus-galli* (Loud.) Rehd.

**2. *Crataegus reverchonii* Sarg. var. *mohrii* (Beadle) J.B. Phipps, comb. et stat. nov.** *Crataegus mohrii* Beadle, Bot. Gaz. 28:416. 1899. TYPE: GEORGIA: FLOYD CO.: Rome, flatwoods, 4 May 1899, C.D. Beadle 236 (LECTOTYPE designated here: A; ISOLECTYPE: US).

*Comments.*—The type number is indicated in the protologue; a fruiting specimen of the same collection number but dated 16 Sep 1898 is on the quoted sheet at A, duplicate US.

*Crataegus denaria* Beadle, Biltmore Bot. Stud. 1:131. 1902.

The co-type, *Beadle 236A*, fits the protologue precisely except that the inflorescences are variably perfectly glabrous to quite densely pilose! This variety is notable for its very strongly and sharply toothed foliage.

*Crataegus reverchonii* var. *mohrii* grows primarily east of the Mississippi River with definite records for Mississippi, Alabama, Georgia and Tennessee. However, in reviewing over 1500 specimens of ser. *Crus-galli* for the southeastern United States, I have only encountered a few specimens clearly matching the type description. Likewise I have not knowingly encountered this variety in the field during over 15 field trips to the region so perhaps it is very rare.

*Crataegus reverchonii* var. *mohrii* clearly belongs to *C. reverchonii* on account of its small, short leaves, 2.5–3.5 cm long at maturity, smallish flowers, 3–5 styles, and broad-elliptic to suborbiculate or rounded extension shoot leaves, characters that also very well differentiate the much more abundant var. *reverchonii* from *C. crus-galli*. Variety *reverchonii* in addition has a very distinct range. It is possible both that var. *mohrii* represents scarce introgressants of the type variety and a form of *C. crus-galli* towards the edge of the range of var. *reverchonii* or it may have arisen independently. As var. *mohrii* is hardly ever seen today it may be some time before this can be answered. The following key illustrates the rather small differences from the remainder of *C. reverchonii*.

1. Short-shoot leaves 2–3.5 cm; flowers 8–12 mm diam.; styles 3–5.
  2. Flowers 8–10 mm diam.; inflorescence usually glabrous; west of Mississippi River \_\_\_\_\_ ***Crataegus reverchonii* var. *reverchonii***
  2. Flowers ca. 12 mm diam.; inflorescence ± pilose; east of Mississippi River \_\_\_\_\_ ***Crataegus reverchonii* var. *mohrii***
1. Short-shoot leaves 4–6 cm; flowers 10–12 mm diam.; styles (2–)3 \_\_\_\_\_ ***Crataegus reverchonii* var. *palmeri***

**series *Macracanthae* (Loud.) Rehd.**

**3. *Crataegus succulenta*** Schrader ex Link var. ***neofluvialis*** (Ashe) E.J. Palmer, in E.J. Dole, ed., *Fl. Vermont*, 3<sup>rd</sup> ed, 155. 1937. *Crataegus neofluvialis* Ashe, *J. Elisha Mitchell Sci. Soc.* 16:71. 1900. TYPE: NORTH CAROLINA. ASHE CO.: along New River, Jul 14 1897 or '99, W.W. Ashe s.n. (LECTOTYPE designated here: NCU). A damaged original label accounts for the lack of certainty about the year of collection.

*Comments.*—The designated specimen is a lectotype because there are other candidates with type in Ashe's hand, another of which is represented by a photograph at US. Ashe (op. cit., 1900) observed that *C. neofluvialis* is common along the North Fork of the New River in Ashe Co., North Carolina and the adjacent part of Virginia.

This variety is described as having particularly narrow leaves softly and abundantly pubescent on unfolding, later with scanty and roughish hairs or with age nearly glabrous, 2–3 pairs of shallow lateral lobes, 5–7 pairs of lateral veins; petiole eglandular; inflorescences 5–15 flowered, branches nearly glabrous; sepal margins strongly glandular-serrate in flower, sometimes  $\pm$  eroded in fruit and may appear subentire; stamens 10–15 (Kruschke 1965, counted 14–20); fruit 6–9 mm diam., greenish, orange or rosy-cheeked.

**series *Molles* (Loud.) Rehd.**

**4. *Crataegus brazoria*** Sarg. var. ***viburnifolia*** (Sarg.) J.B. Phipps, comb. nov. *Crataegus viburnifolia* Sarg., *Trees & Shrubs* 2(3):145, pl. 159. 1911. TYPE: TEXAS. BRAZORIA CO.: Columbia, 23 Mar 1909, B.F. Bush & C.S. Sargent 11 (HOLOTYPE: A).

*Comments.*—Among three specimens of this number and date, I have selected the one with the greatest number of flowers in good condition. It has a more or less horizontal flowering spray across the top of the sheet. TEXAS. BRAZORIA CO.: Columbia, common in woods, fruit canary yellow, 25 Sep 1901, B.F. Bush tree 11, = Bush 912 (EPITYPE designated here: A).

*Comments.*—The type number is indicated in the protologue; a fruiting epitype from the same tree as the lectotype is necessary here because it guarantees the correct fruit color without which identity is ambiguous.

*Crataegus brazoria* var. *viburnifolia* is a large bush or small tree from southeastern Texas very similar to *C. mollis* (Torr. & A. Gray) or *C. texana* Buckl. differing from them primarily in fruit color. The pure form is thus effectively a bright yellow-fruited *C. mollis*. It is only occasionally encountered today. It flowers early. Well grown, var. *viburnifolia* is one of the most handsome and spectacular of all hawthorns.

KEY TO EXTREME FORMS OF *CRATAEGUS BRAZORIA*

1. Most leaves  $\pm$  broad ovate to broad elliptic, barely but sharply lobed, rough-hairy abaxially at maturity; anthers ivory; pomes 15–20 mm diam. \_\_\_\_\_ ***Crataegus brazoria* var. *viburnifolia***
1. Most leaves  $\pm$  elliptic, not lobed, glabrous abaxially at maturity; anthers rose; pomes 8–10 mm diam. \_\_\_\_\_ ***Crataegus brazoria* var. *brazoria***

*Crataegus brazoria* is a large bush or small tree restricted to the lower Columbia watershed of southeast Texas. Its best growth is in rich alluvial soil with adequate moisture but it also occurs in a variety of brushy habitats. It is var. *brazoria* that is most different from *C. mollis-texana* on the basis of both leaf shape and indumentum. Pure variety *brazoria* is similar to the red-fruited *C. texana* but is rarely seen today. For now it is united with *C. viburnifolia* both because of the unusual fruit color and its similar local range, suggesting an adaptation to a particular frugivore disperser. Molecular work and intensive modern field studies are required to confirm this interpretation but it is the one that provisionally seems most realistic.

**series *Pruinosae* Sarg. ex Rehd.**

**5. *Crataegus pruinosa*** (H.L. Wendl.) K. Koch var. ***dissona*** (Sarg.) J.B. Phipps, comb. et stat. nov. *Crataegus dissona* Sarg., *Rhodora* 5:60. 1903. TYPE: CONNECTICUT. NEW HAVEN CO.: Oxford, 27 May 1901, E.B. Hager 39 (LECTOTYPE designated here: A).

*Comment.*—An excellent fruiting specimen (29 Sep 1901) of the same number is mounted on the same sheet as the lectotype.

*Crataegus pruinosa* (H.L. Wendl.) K. Koch f. *dissona* (Sarg.) Eggl., *Rhodora* 10:81. 1908.

*Crataegus brachypoda* Sarg., *Annual Rep. Missouri Bot. Gard.* 19:100. 1908.

*Crataegus disjuncta* Sarg., *Trees & Shrubs* 1:109. 1908.

*Crataegus rigida* Sarg., *Annual Rep. Missouri Bot. Gard.* 19:99. 1908.

This is the only member of series *Pruinosae* with 10 stamens and as such is readily separated from other varieties of *C. pruinosa*.

*Crataegus pruinosa* var. *dissona*, found from Missouri to Wisconsin and through the Great Lakes to New England, then south to Georgia, is widely scattered throughout the range of *C. pruinosa*. The detailed distribution is not well known, however and may be more widespread than recorded. The variation in leaf shape of var. *dissona* approximately parallels that of var. *pruinosa*. *Crataegus brachypoda* is a form with cream anthers while *C. disjuncta* has particularly large foliage.

**6. *Crataegus gattingeri*** Ashe, J. Elisha Mitchell Sci. Soc. 17:12. 1900. TYPE: TENNESSEE. DAVIDSON CO.: Nashville, Sep 1880, *Dr. Gattinger s.n.* (LECTOTYPE designated here: MO).

*Comment.*—MO claims this is an isotype, but I could not locate duplicates at HUH, NY, TENN or US.

*Crataegus georgiana* Sarg., Bot. Gaz. 32:113. 1902. TYPE: GEORGIA. FLOYD CO.: Rome, 22 Apr 1900, *C.S. Sargent s.n.* (LECTOTYPE designated here: A). *Comment.*—*Crataegus georgiana* is also typified here because of the long-standing view that it was a synonym of *C. pruinosa* or maybe even its own species. However, this proves to be incorrect because careful examination of the type of *C. georgiana* shows that it cannot be meaningfully differentiated from that of *C. gattingeri* Ashe, an earlier name. There are two sheets at A with this information, one the lectotype.

### series *Rotundifoliae* (Eggl. ex Sarg.) Rehd.

**7. *Crataegus jackii*** Sarg., Rhodora 5:162. Jun 1903. TYPE: QUEBEC. LA PRAIRIE CO.: Caughnawaga, 29 May 1901, *J.G. Jack I* (LECTOTYPE designated here: A).

*Comment.*—There are also many excellent syntypes, mostly in flower.

*Crataegus jackii* was restricted to southern Quebec in and near Montreal and was generally believed to be a variant of *Crataegus chrysoarpa*. However, it differs in its larger flowers, smaller and more broad-elliptic short-shoot leaf-blades, more suborbiculate outline of the extension shoot leaf-blades and very conspicuous bracteoles that are larger and more prominently glandular than in the latter species. Further, its bracteoles prove to be similar to those of the *C. dodgei* complex and the larger, better-developed bracteoles have stipitate glands. *Crataegus jackii* is very hairy in the manner of *C. lumaria* (Ashe, J. Elisha Mitchell Sci. Soc. 19:25, April, 1903) of the *dodgei* complex and differs significantly from that species only in its larger flowers and disjunct distribution. It is thus here made a synonym of *C. lumaria*.

**8. *Crataegus chrysoarpa*** Ashe var. ***vigintistamina*** J.B. Phipps, var. nov. TYPE: MINNESOTA. WADENA CO.: 1 mi NNW of Blue Grass, 6 Jun 1996, *Welby R. Smith 26113* (HOLOTYPE: UWO).

*Comment.*—The matching fruiting specimen, *Smith 26424*, is held in the unlisted herbarium of the Minnesota Dept. of Natural Resources, Minneapolis-St. Paul.

A var. *chrysoarpa* differt in numero staminum, constanter ca. 20.

Variety *vigintistamina* is the name to be given to specimens of *Crataegus chrysoarpa* only differentiable from the type variety by stamen number. Thus, there are 20 stamens and ivory to cream anthers.

CANADA: Man., ?Ont.; U.S.A.: Mich., Minn., N.Y., Wisc., ?others. The new variety appears to be scattered throughout the eastern part of the range of *C. chrysoarpa* but it is poorly recorded. We have by far the most records from Minnesota.

Variety *vigintistamina* has been confused with *C. divergens* (Peck) Sarg., *sens. auctt.* [New York State Mus. Bull. 105:66. 1906] and *C. irrasa* var. *divergens* Peck, *sens. auctt.* [New York State Mus. Bull. 75:51. 1904] which has a type from New York, Rensselaer County, North Greenbush but which, according to Peck and Sargent, has 10–18 stamens. The type of this variety (*C.H. Peck 70*) actually has 10 stamens and thus its name is not usable for the novelty named here. Nevertheless, *divergens* has been incorrectly utilized for the 20-stamen variety proposed here. Variety *vigintistamina* is also neither the same as the 20-stamen British Columbian *C. sheila-hippsiae* J.B. Phipps & O'Kennon with glabrous inflorescences and pink anthers nor the eastern species *C. irrasa* Sarg. and *C. oakesiana* Eggl. which have rather differently formed leaves. Leaves of the latter two are generally larger and more venous than in *C. chrysoarpa* varieties.

**9. *Crataegus chrysocarpa* Ashe var. *praecox* (Sarg.) J.B. Phipps, comb. et stat. nov.** TYPE: NEW YORK. ESSEX CO.: Crown Point, 9 Sep 1900, E. Brainerd and C.S. Sargent s.n. (LECTOTYPE designated here: A).

*Comments.*—Brainerd's name is not on the lectotype label and only a C.S. Sargent 17 specimen with the correct label data can be located. However, it is assumed that the latter is indeed the specimen alluded to in the protologue and cited here as lectotype.

*Crataegus praecox* Sarg., *Rhodora* 3:27. 1901.

*Crataegus praecoqua* Sarg., *Rhodora* 5:167. 1903, nom. illegit.

The diagnostic characteristic of the new variety, pink anthers, has unfortunately not been possible to verify due to lack of a specimen. However, a currently unlocatable Brainerd and Sargent collection from Crown Point, New York, came from a plant said to have pink anthers by Sargent (op. cit. 1903). That it has pink anthers, while it is, therefore, just Sargent's memory, is specifically given as a correction in 1903 and must therefore be given credence. If it can ever be located, it would be worth consideration for an epitype as the fruiting lectotype lacks diagnostic information.

*Crataegus praecoqua* was created as a replacement name for *C. praecox* when Sargent was following the American rules which would have treated his 1901 name as a homonym of *C. oxyacantha* var. *praecox* Loudon, 1838. The rules of the present code are, however, retroactive.

Variety *praecox* is essentially the same as *Crataegus chrysocarpa* var. *chrysocarpa*, except with pink anthers. Although the type of this variety comes from New York, forms of *C. chrysocarpa* with pink anthers are scattered throughout the range of the species, being especially frequent in Minnesota, and need a home. Minnesota material may have thorns 7–8 cm long.

**10. *Crataegus chrysocarpa* Ashe var. *blanchardii* (Sarg.) J.B. Phipps, comb. et stat. nov.** *Crataegus blanchardii* Sarg., *Rhodora* 7:218. 1905. TYPE: VERMONT. WINDHAM CO.: Deerfield River Valley, Wilmington, 26 Sep 1903, W.W. Eggleston 3452 (HOLOTYPE: A).

*Comment.*—This number was designated as type in the protologue. VERMONT. WINDHAM CO.: Deerfield River Valley, Wilmington, 20 May 1903, W.W. Eggleston 3451 (EPITYPE designated here: A).

*Comment.*—Because a distinguishing feature of this taxon is its anther color, it is essential on current understanding of this taxon to designate as epitype a flowering specimen which has this character explicitly mentioned in the notes and is seemingly still visible.

*Crataegus irrasa* Sarg. var. *blanchardii* (Sarg.) Eggl., *Rhodora* 10:79. 1908.

Variety *blanchardii* is like the typical variety, but with 20 pink anthers. The nutlets of the lectotype are plane-sided. Its range is from Quebec to Vermont and New York in the east and in Minnesota in the Midwest, where it is most abundant.

### series *Virides* (Loud.) Rehd.

**11. *Crataegus viridis* L. var. *velutina* (Sarg.) J.B. Phipps, comb. et stat. nov.** *Crataegus velutina* Sarg., *Trees & Shrubs* 2:238. 1913. TYPE: ARKANSAS. HEMPSTEAD CO.: near Fulton, upland woods in dry soil, 25 Apr 1905, B.F. Bush 10C (HOLOTYPE: A).

*Comment.*—Type number is indicated in protologue and duplicates with this label data are not known.

Variety *velutina* is concentrated in western Louisiana, western Arkansas, and eastern Texas and is the only variety of *Crataegus viridis* possessing significant pubescence beyond the tufts of hair in the adaxial vein axils. This is sufficient for diagnosis. However, similar forms but less velutinous young are found in Florida where they have been named *Crataegus subviridis*. Apart from this Florida situation, var. *velutina* is easily recognized in young foliage and at anthesis, has a compact range, and has virtually no intermediates with the glabrous form of *Crataegus viridis*. *Crataegus poliophylla* Sarg. represents a red-anthered form of the variety. A strong tendency to glabrescence may explain the small percentage of fruiting specimens recognized for this variety. It is not yet clear whether the Florida plants referred to should be referred to variety *velutina*, var. *viridis*, or perhaps *subviridis* at a varietal rank.

*Crataegus viridis* var. *velutina* might eventually be construed as a hairy form of *C. viridis* var. *lanceolata*. Suspicions that var. *velutina* might represent *C. viridis* × *C. collina* or *C. viridis* × *C. berberifolia* hybrids are annulled by their consistently small fruit size and entire-margined sepals.

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